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2025 제22차 국제연수과정

NHIS UHC GLOBAL ACADEMY

Structure of Korean Fee-for-Service and Medical Cost Calculation

Contents

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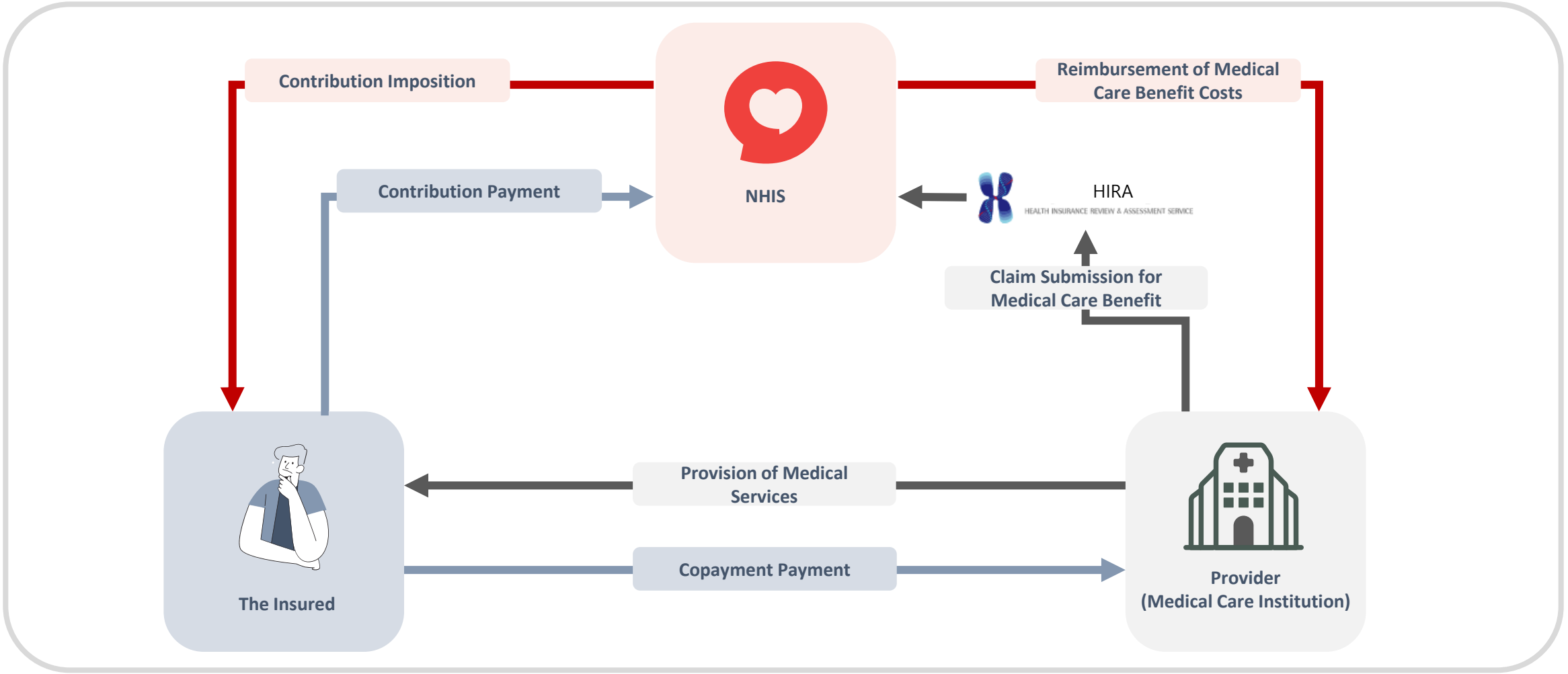
01

Structure of Fee-for-Service

Health insurance structure



Introduction of Health Insurance Fee System

Fee-for-Service

- **Providers are paid for each healthcare service performed,** and patients are charged depending on the price and volume of the services by the healthcare providers
- **FFS** has been the **main payment system** since the launch of national health insurance in 1977

Bundle Fee Schedule

- **DRG**

  ① 7 disease groups ② New DRG-based payment system (pilot system)

  * 7disesase groups(Cataract surgery, Tonsillectomy and Adenoidectomy, Appendectomy, Hernia surgery, Hemorrhoidectomy, Hysterectomy, Cesarean section)

- **Per diem** (ex. convalescent hospital and hospice)
- **Per visit** (ex. psychiatric department and dialysis)

Fee-for-Service Benefit Structure

Procedures

List of Services Covered and Uncovered by NHI

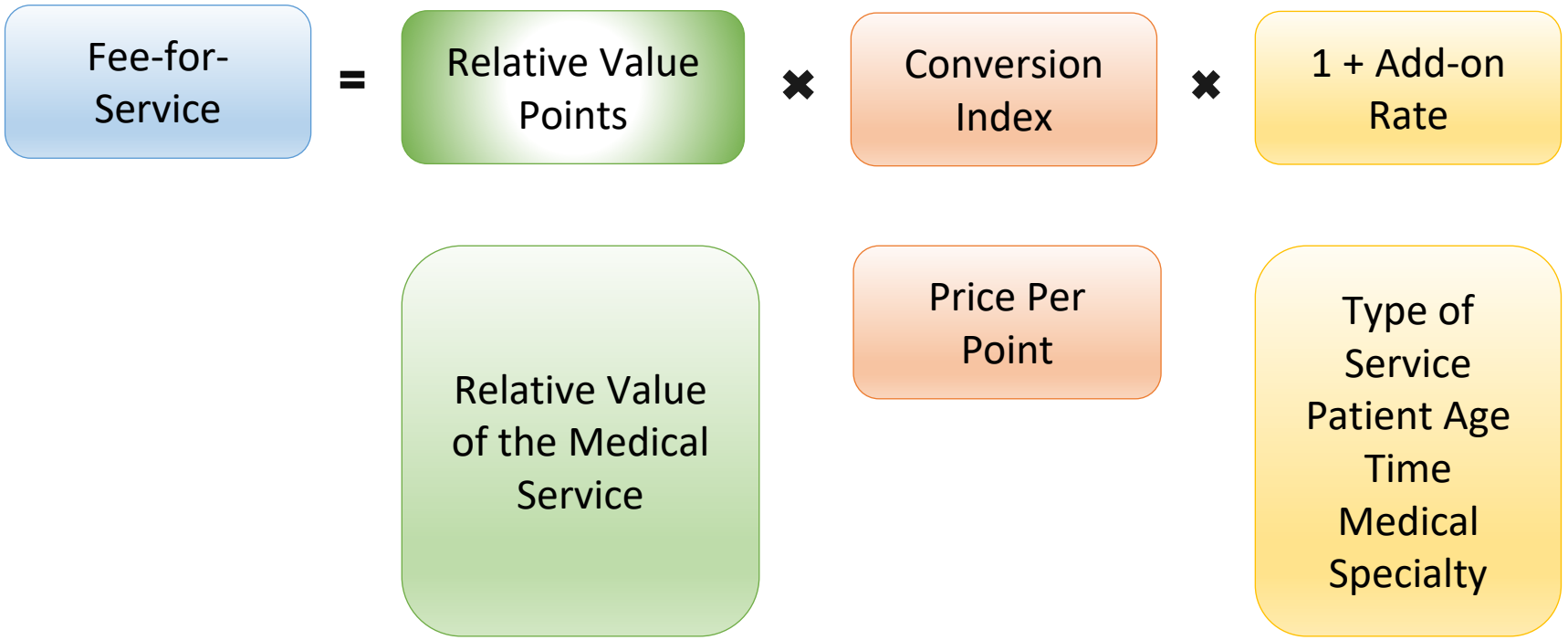
Drugs

List of Covered and Uncovered Drugs and Ceiling Price of Covered Drugs

Medical Supplies

List of Covered and Uncovered Medical Supplies and Ceiling Price of Covered Supplies

Calculation of Fee-for-Service Price



Calculation of Fee-for-Service Price

Relative Value Points

Components of Relative Value Points

Workload

Physician Services:

Compensation for the time and effort of medical professionals (doctors, pharmacists).

Medical Expenses

Medical Personnel

Medical Supplies

Medical Devices

Compensation for personnel (specialists, nurses, medical technicians, etc.), supplies, and equipment used in medical care.

Risk Level

Medical Dispute Settlement Costs

Medical malpractice Dispute Resolution Costs

Calculation of Fee-for-Service Price

Relative Value Points

(Example) Relative value points for a single-occupancy general isolation room admission fee

Classification Number	Code	Classification	Relative Value Points
A-10	AK100	Tertiary general hospital	4,151.86
	AK200	General hospital	3,196.31
	AK300	Hospital, psychiatric hospital, dental clinic, medical and dental departments within Korean medicine hospitals	2,702.33
	AK400	Medical clinics, dental clinics, medical and dental departments within public health and medical center	1,791.74

(Example) Total gastrectomy

Classification Number	Code	Classification	Relative Value Points
I-253	Q2533	Abdominal approach - including lymph node dissection	26,910.47
	Q2536	Abdominal approach - not including lymph node dissection	19,846.44
	Q2534	Thoracoabdominal approach - including lymph node dissection	30,573.58
	Q2537	Thoracoabdominal approach- not including lymph node dissection	24,805.65

Calculation of Fee-for-Service Price

Conversion Index

● Conversion Index in 2025 (Unit Price per Relative Value Points by Type of Medical Care Institution)

Clinic	Hospital	Dentistry	Korean medicine	Pharmacy	Public health care
94.1 KRW (USD 0.07$)	82.2 KRW (USD 0.06$)	99.1 KRW (USD 0.07$)	102.4 KRW (USD 0.07$)	102.1 KRW (USD 0.07$)	96.0 KRW (USD 0.07$)

Calculation of Fee-for-Service Price

Additional Rate by Facility Type

To ensure that medical institutions can fulfill their roles and functions according to their type, an **additional support rate** is applied

〈Additional Rate by Facility Type〉

- Tertiary Hospitals: 15%
- General Hospitals: 10%
- Hospitals: 5%
- Clinics: 0%

Calculation of Fee-for-Service Price

(Example) Medical Care Benefit Cost Calculation

Wound Dressing – Simple Dressing

Classification Number	Code	Classification Number	Relative Value Points
I-2-1	M0111	Wound Dressing - Simple Dressing	75.51

- Medical Consultation at Clinics

(Relative Value Points) 75.51 X (Conversion Index) 94.1 KRW(USD 0.07$) X (Add-on Per Specialty) 1.0

= 7,110 KRW(USD 4.98$)

Copayment

Patient Copayment rate

The percentage of total medical expenses that must be paid directly by the patient

Inpatient	Outpatient
20%	Clinics 30% Hospitals 40% General Hospitals 50% Tertiary General Hospitals 60%

- Infants Under 2 Years Of age : Exemption , Serious Disease : 5% , Rare Disease : 10 %

Procedure of Listing Medical Care Benefits

Procedure for Listing Health Insurance Coverage

1. **Evaluation of New Medical Technology** (Safety and Effectiveness)

→ 2. Application for Decision

→ 3. **Expert Review Committee** (Economic Feasibility and Suitability for Coverage Evaluation)

→ 4. **Health Insurance Policy Review Committee**

→ 5. **Announcement by the Ministry of Health and Welfare**

Criteria of Non-Benefit

Standards of Non-benefit

01 Does not cause difficulties in daily life

02 Not intended to improve essential health functions

03 In case of DRG inpatient services, uncovered services are notified by the Minister of Health and Welfare

04 Not intended to treat injuries and diseases

05 Cases such as selective treatment and upgraded wards that may not be recognized under benefit criteria

06 Not in accord with policies or principles of benefit provision under NHI

07 Drugs outside of the permitted benefit scope

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02

Medical Cost Calculation

Perspectives on Costing

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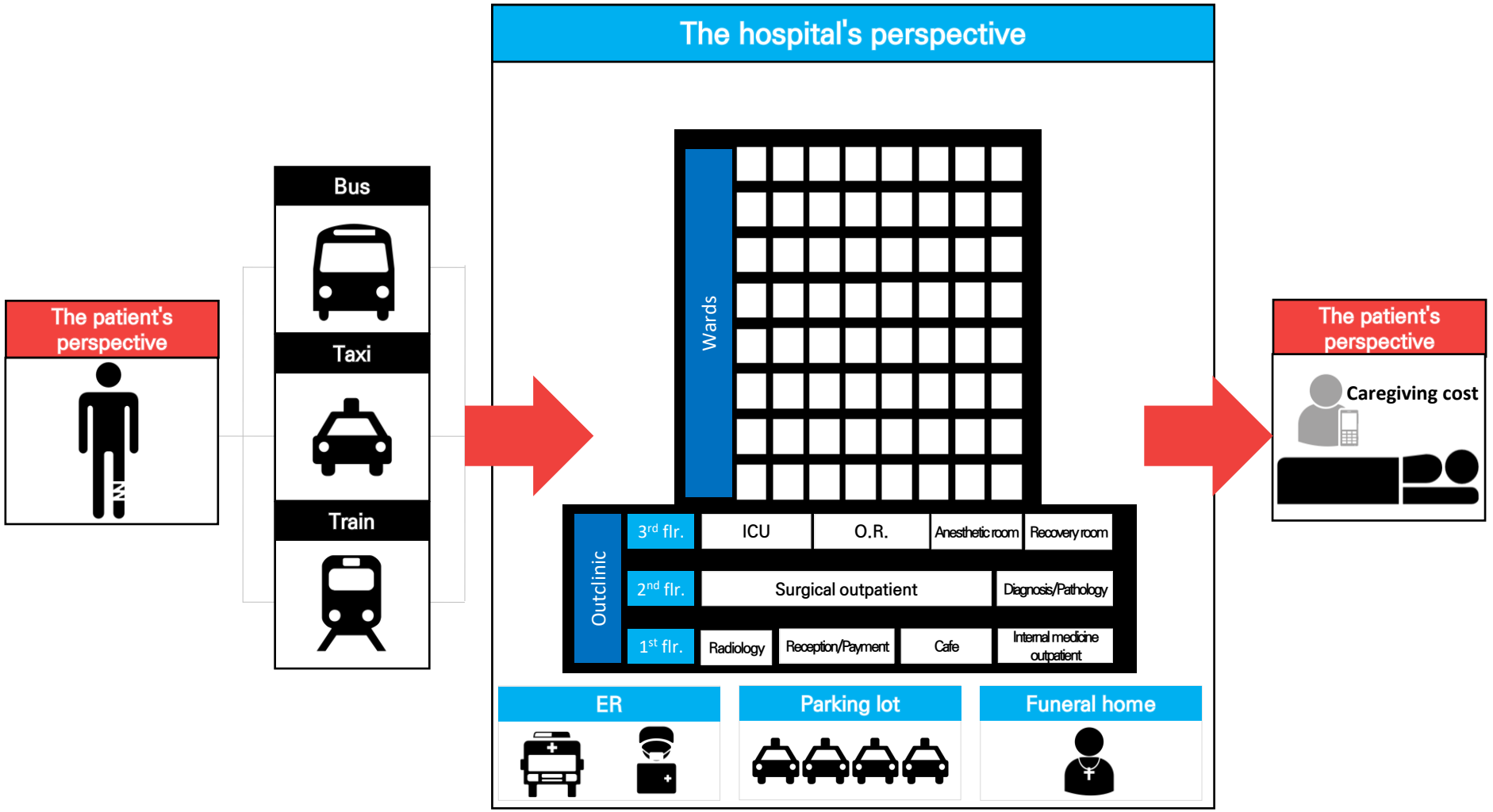

Determining Precision

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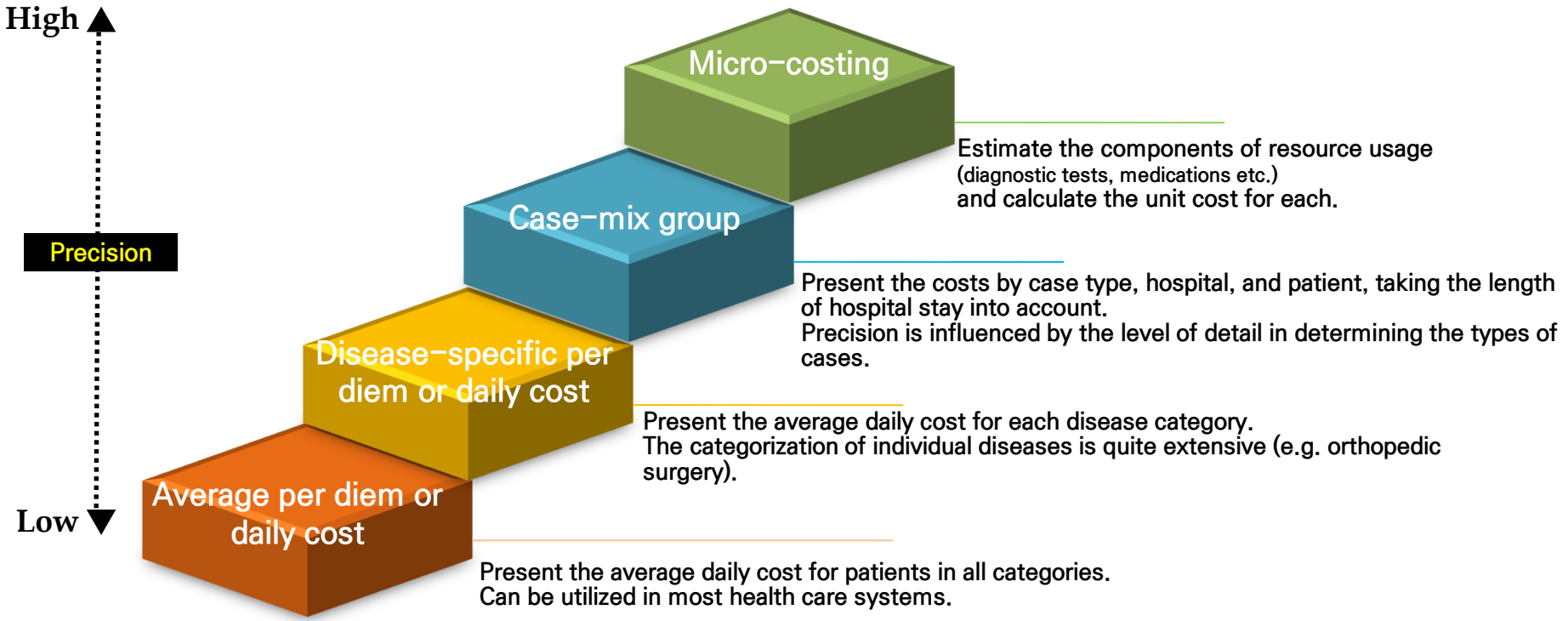
Must decide how accurately (precisely) the cost will be estimated



Estimate the components of resource usage (diagnostic tests, medications etc.) and calculate the unit cost for each.

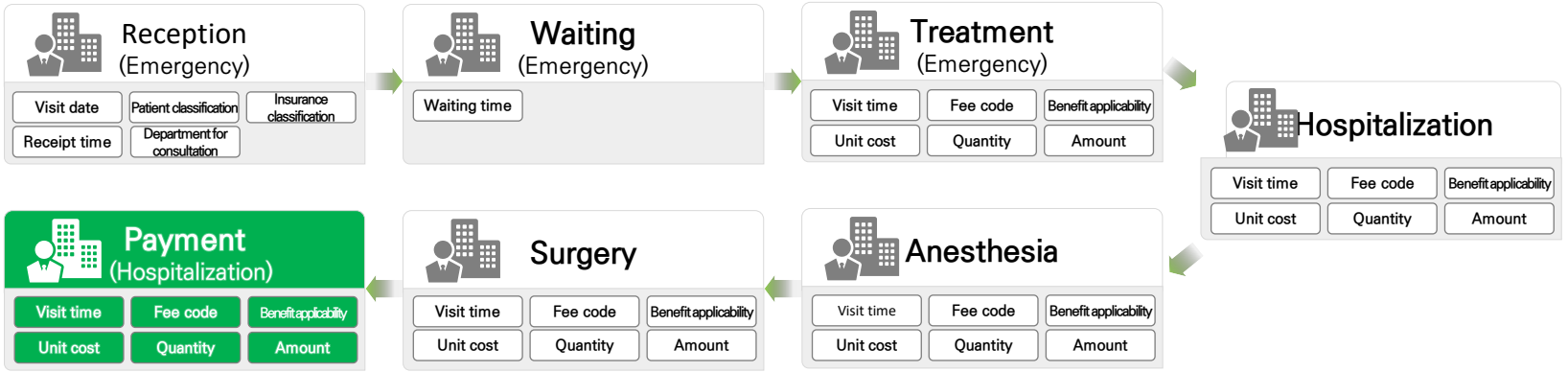
Present the costs by case type, hospital, and patient, taking the length of hospital stay into account.
Precision is influenced by the level of detail in determining the types of cases.

Present the average daily cost for each disease category.
The categorization of individual diseases is quite extensive (e.g. orthopedic surgery).

Present the average daily cost for patients in all categories.
Can be utilized in most health care systems.

Medical Providers' Inpatient Services

Medical Expense Analysis Team, Department of Benefits Management, NHIS



Provider code	Patient number	Resident no.	Visit date	Discharge date	Patient classification	Insurance classification	Receipt time	Visit time	Department	Ward	Fee code	Benefit applicability	Unit cost	Quantity	Amount
NHIS hospital	OOO	821001-1	211218	211220	Emergency	Health insurance	10:00	10:10	ER	-	V1310	Applicable	56,920	1	56,920
NHIS hospital	OOO	821001-1	211218	211220	Hospitalization	Health insurance	10:00	10:10	Orthopedics	Ward 61	AO240	Applicable	78,710	1	78,710
NHIS hospital	OOO	821001-1	211218	211220	Hospitalization	Health insurance	10:00	10:10	Orthopedics	Ward 61	AC421	Applicable	1,970	1	1,970
NHIS hospital	OOO	821001-1	211218	211220	Hospitalization	Health insurance	10:00	10:10	Orthopedics	Ward 61	AU222	Applicable	9,290	1	9,290
NHIS hospital	OOO	821001-1	211218	211220	Hospitalization	Health insurance	10:00	10:10	Orthopedics	Ward 61	AU302	Applicable	860	1	860
NHIS hospital	OOO	821001-1	211218	211220	Hospitalization	Health insurance	10:00	10:10	Orthopedics	Ward 61	AU403	Applicable	260	1	260
NHIS hospital	OOO	821001-1	211218	211220	Hospitalization	Health insurance	10:00	10:10	Orthopedics	Ward 61	L1213	Applicable	75,090	1	75,090
NHIS hospital	OOO	821001-1	211218	211220	Hospitalization	Health insurance	10:00	10:10	Orthopedics	Ward 61	N2470	Applicable	571,940	1	571,940
NHIS hospital	OOO	821001-1	211218	211220	Hospitalization	Health insurance	10:00	10:10	Orthopedics	Ward 61	J1030	Applicable	290	1	290
NHIS hospital	OOO	821001-1	211218	211220	Hospitalization	Health insurance	10:00	10:10	Orthopedics	Ward 61	J1600	Applicable	100	1	100

Utilizations of Medical Service
Resource Allocation

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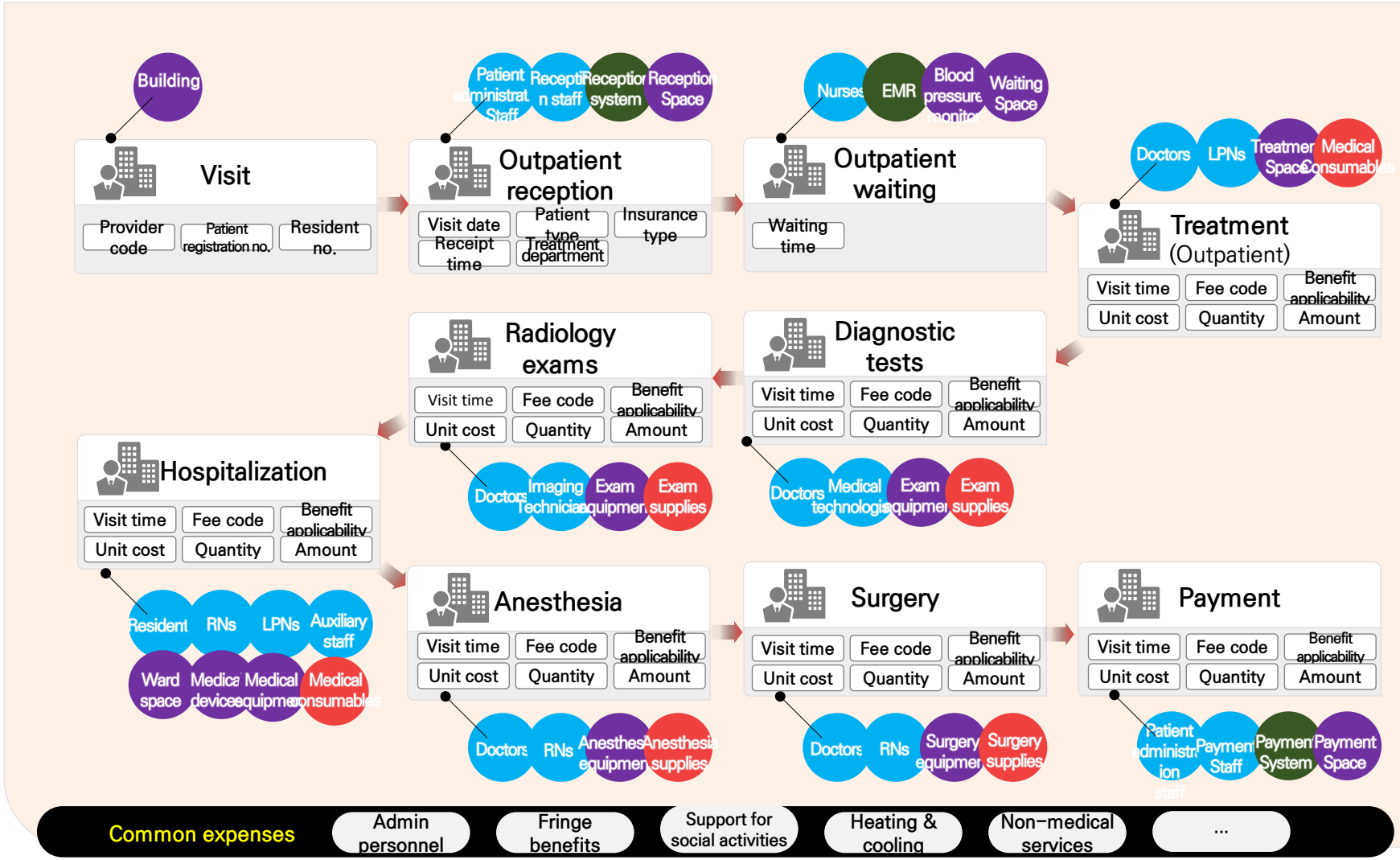
Labor costs | Material costs | Depreciation | Admin costs



Calculation and Analysis methods

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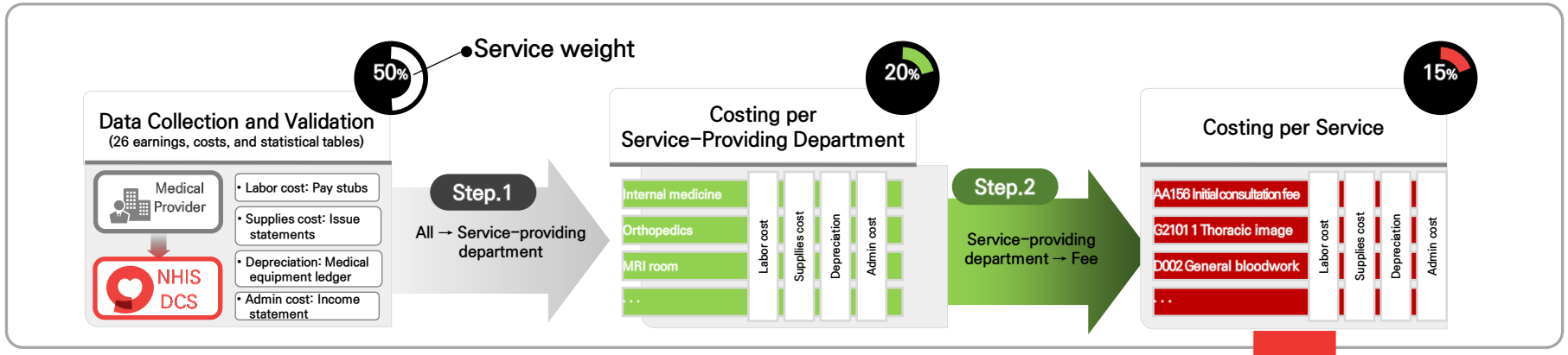
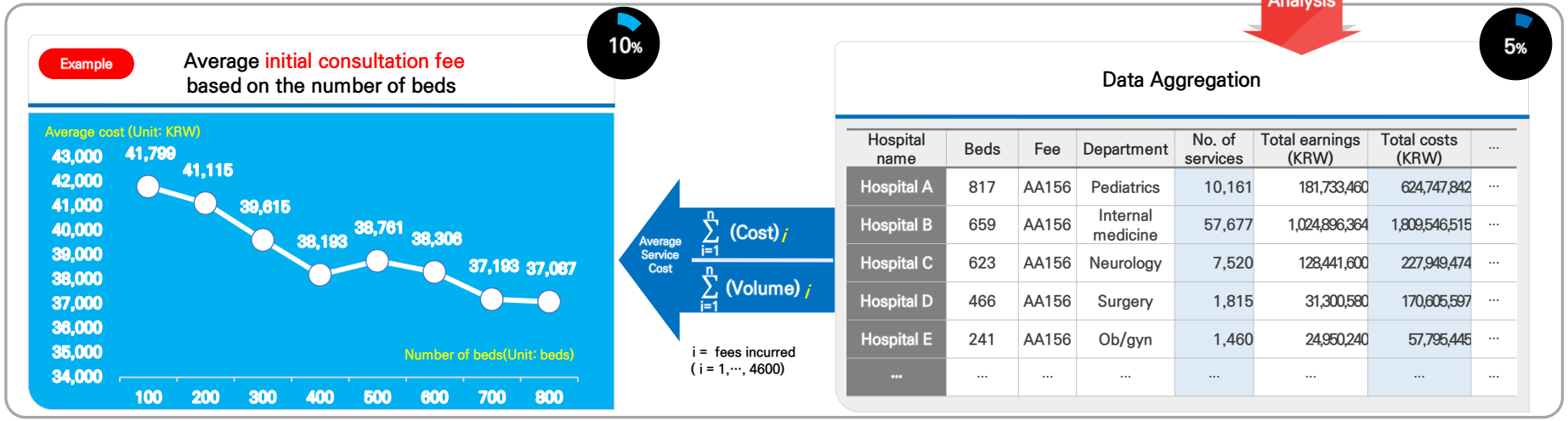
After calculating the 'Cost per unit' base on the 'Total cost' of medical institutions by distributing it to medical activities, calculate the averge cost of various combinations such as Institution x Medical department x Disease Model.



Analysis



Hospital name	Beds	Fee	Department	No. of services	Total earnings (KRW)	Total costs (KRW)	...
Hospital A	817	AA156	Pediatrics	10,161	181,733,460	624,747,842	···
Hospital B	659	AA156	Internal medicine	57,677	1,024,896,364	1,809,546,515	···
Hospital C	623	AA156	Neurology	7,520	128,441,600	227,949,474	···
Hospital D	466	AA156	Surgery	1,815	31,300,580	170,605,597	···
Hospital E	241	AA156	Ob/gyn	1,460	24,950,240	57,795,445	···
...	...	...	...	...	...	...	...

List of Collected Tables

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NHIS collects 30 related tables, including revenue, expenses, status, and statistic, in spreadsheets Format to analyze the cost structure of healthcare services..

Earnings Records(6)

- Earnings breakdown by fee / DCM_EXT_CONT_30
- Earnings breakdown by patient / DCM_EXT_BASE_20
- Discount statement/ DCM_EXT_PATIENT_DISCOUNT
- Reduction statement / DCM_EXT_REDUCTION
- Subsidy status / DCM_EXT_EXT_SUBSIDY
- Income statement / DCM_EXT_PL

Cost Records(4)

- Labor cost / DCM_EXT_PAYROLL_LEDGER
- Goods issue statement / DCM_EXT_MATERIAL_LEDGER
- Depreciation / DCM_EXT_DEPRECIATION_COST
- Accounting document / DCM_EXT_GENERAL_LEDGER

Status Records (7)

- Doctor affiliation / DCM_EXT_DEPARTMENT_DCT
- Health checkup doctors status / DCM_EXT_HEALTH_PROMOTION
- Ward status / DCM_EXT_WARD
- Major equipment status / DCM_EXT_MAJOR_ASSETS
- Department code / DCM_EXT_DEPARTMENT
- Fee code / DCM_EXT_SUGA_CODE
- Code mapping / DCSDC_CODE_MAPPING_VERIFY

Statistics Records(6)

- Department statistics / DCM_EXT_DRIVER_DATA
- Outpatient statistics / DCM_EXT_OUT_PATIENT
- Inpatients statistics / DCM_EXT_IN_PATIENT
- Surgical hours statistics / DCM_EXT_OP_PATIENT
- DRG patient data/ DCM_EXT_AN_PATIENT
- Patient data by insurance type / DCM_EXT_INSURANCE_PATIENT

+ Secondary data (7)

Verification System

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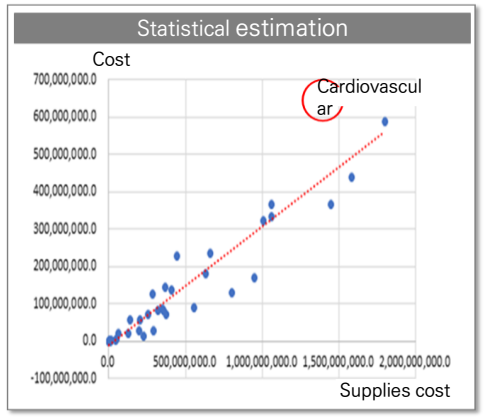
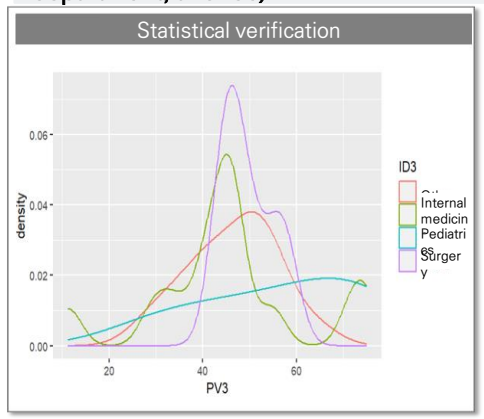
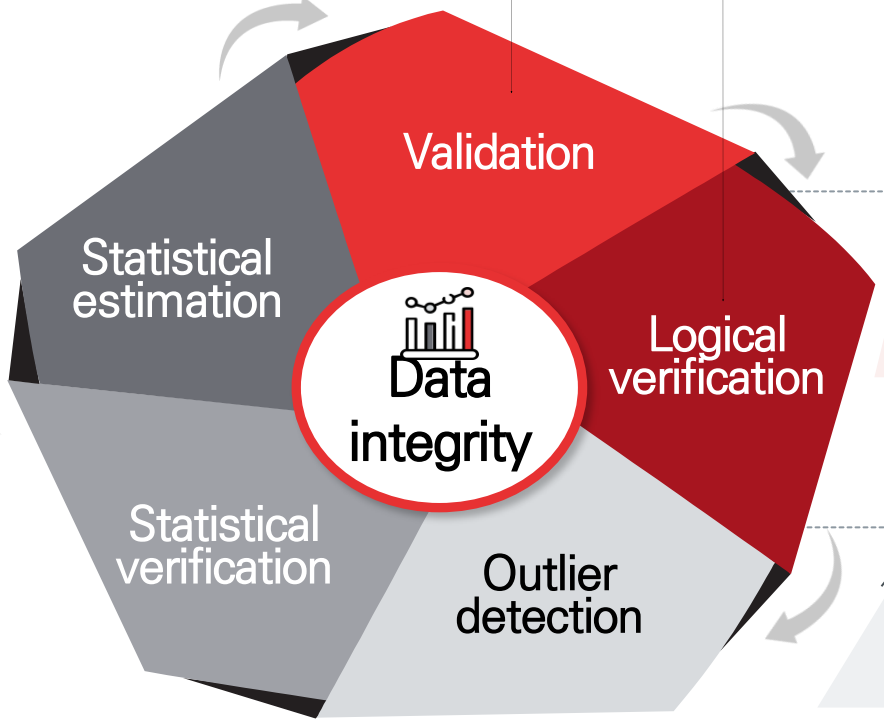
NICE DAT(NHIS Information Cost Exploratory Data Tool), copyrighted(June 16, 2023)

- Identify continuity and anomalies in cost information using regression analysis, time series analysis, etc.

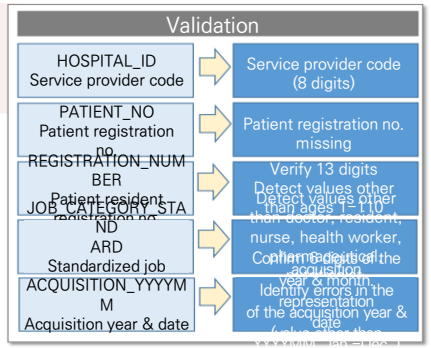


- Assess data quality by comparing statistical distributions (by hospital, service-providing department, and fee)

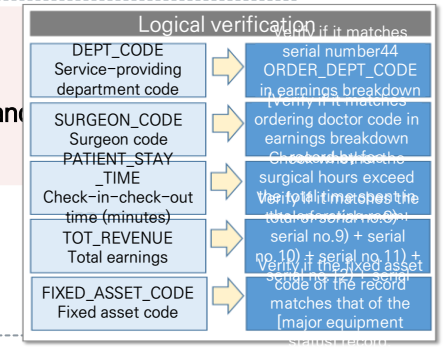




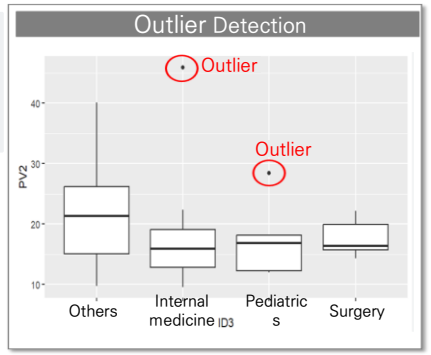
- Verification of data format and omission detection



- Remove logical errors, identify missing values and find solutions



- Identify longitudinal and latitudinal outliers and suggest solutions



Standardization of Employee Affiliation (Example)

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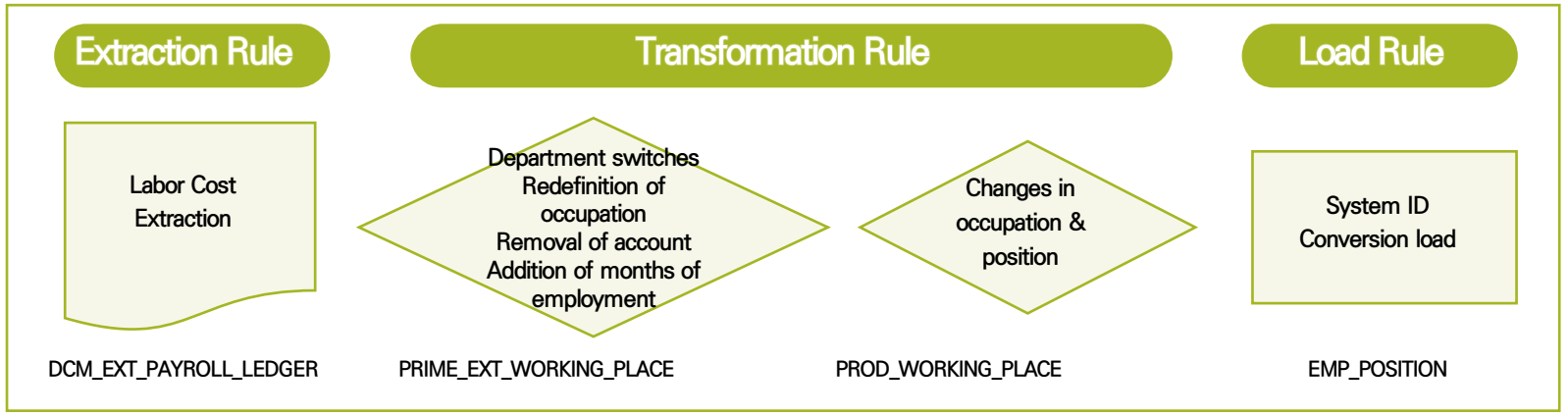

Excel Data

Year	Hospital	Month	Staff no.	Department	Occupation	Position	Account	Amount
2015	A	1	180342	Nursing (Ward 51)	Nurse	Level 5	Salary	4,000,000

Department switch Redefine position Remove account Add months of employment

Converted Data 1

Year	Hospital	Month	Staff no.	Department	Occupation	Position	Months of employment	Amount
2015	A	1	A180342	General ward	Nurse	Nurse – Level 5	1	4,000,000

Converted Data 2

Year	Hospital	Name	Staff no.	Assigned department	Department of actual work	Occupation	Position	Enter value Y
2015	A	A180342	A180342	General ward	General ward	Nurse	Nursing–Nursing	Y

System Load

Year			Staff no.	Assigned department	Department of actual work	Occupation	Position	
15			2634	4076	4076	103	110	

Execution Department Calculation Logic

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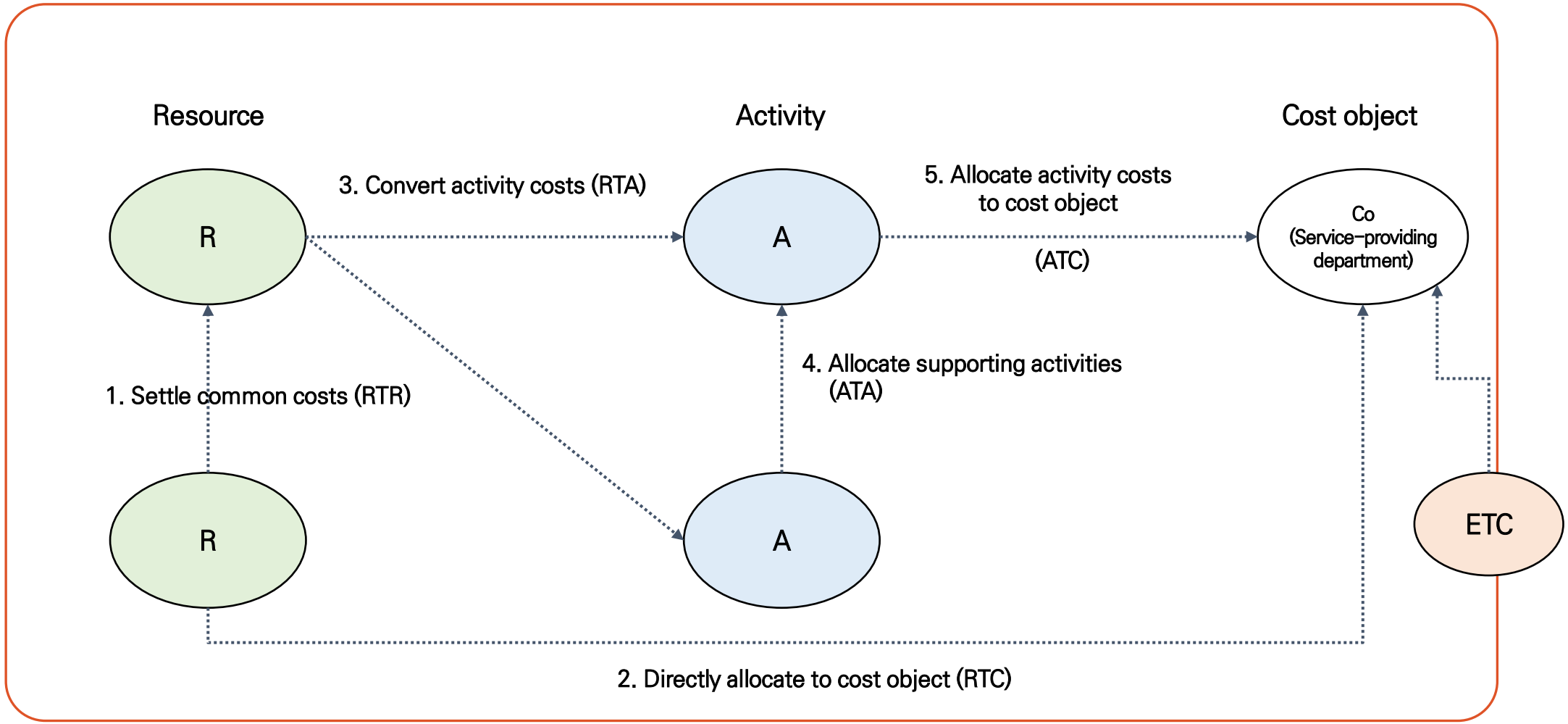

Diagram of Fee-based Costing

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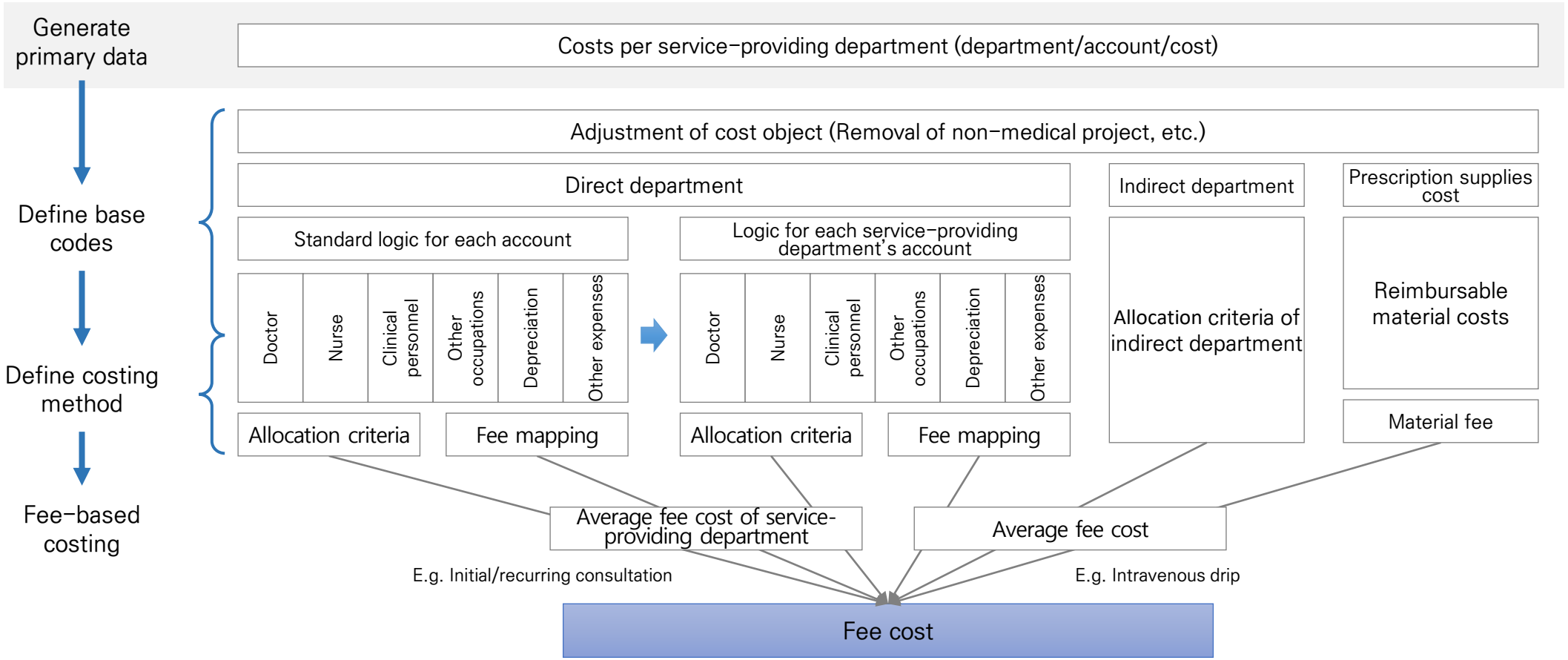
By using execution and account-based costs, perform fee cost calculations
To derive the major costs by account



Calculation Result

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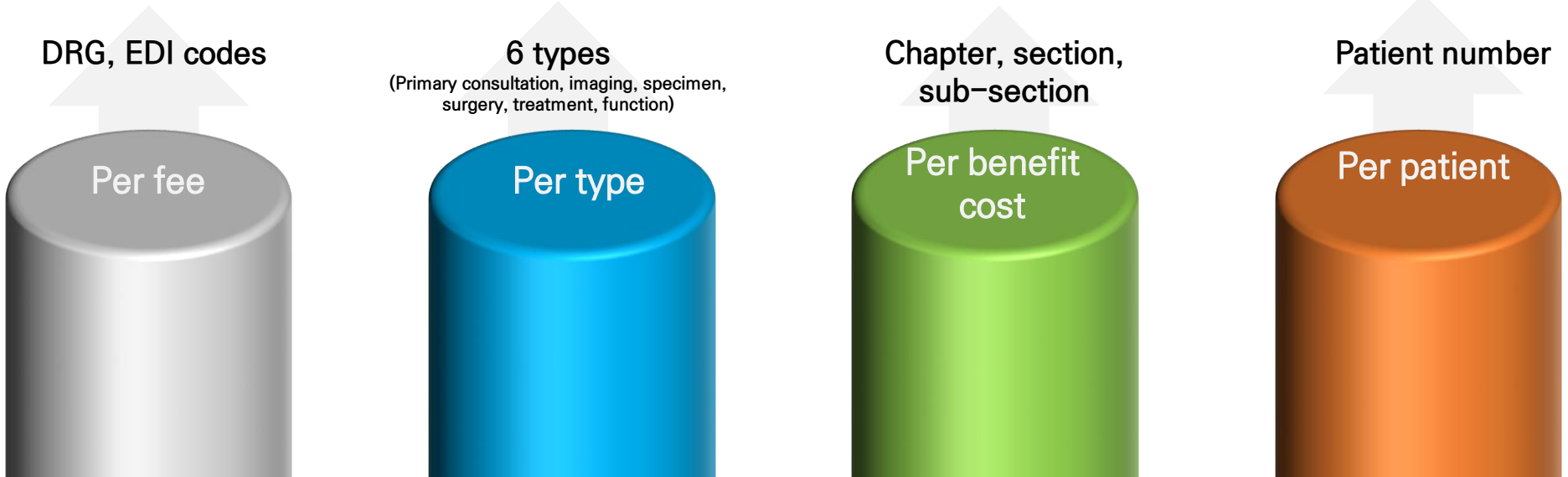
▶ Rib fracture reduction (closed pinning)

DRG Code	EDI Code	Type	Chapter	Section	Sub-section	No. of Patients	Total earnings	Total costs								
								Total (B)	Labor cost					Supplies cost	Depreciation	Admin cost
									Sub-total	Doctors	Nurses	Clinical Personnel	Other			
E64200	N0531	Surgery	Chapter 9	1. Treatment and surgery fee	3. Musculoskeletal	39	3,956,352	7,016,326	5,889,730	4,372,317	814,317	71,841	631,255	201,997	1,520	923,079
•••	•••	•••	•••	•••	•••	•••	•••	•••	•••	•••	•••	•••	•••	•••	•••	•••
					Per EDI code unit		101,445	179,906	151,019	112,111	20,880	1,842	16,186	5,179	39	23,669



Multidimensional Medical Costing System

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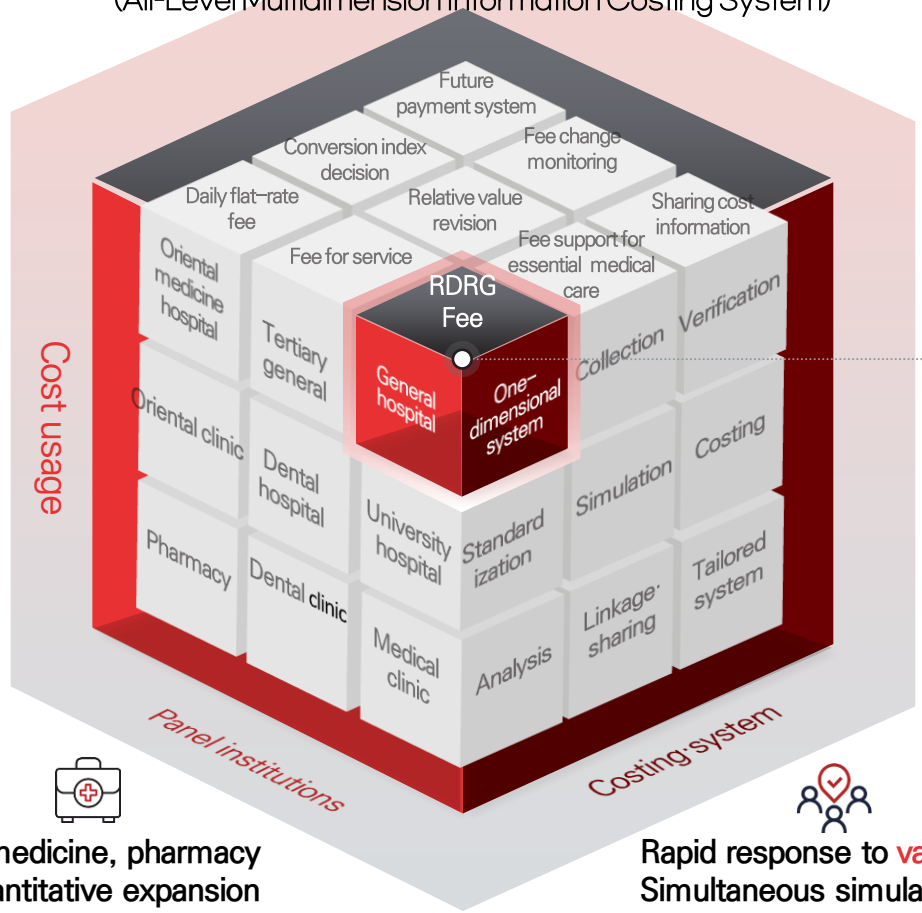
ALICS

(All-Level Multidimension Information Costing System)



Future

TO-BE

Current

AS-IS

Revise relative values, produce the evidence for cost-based fees, and provide support for future payment system

For all types and practices: medical, dental, oriental medicine, pharmacy
Qualitative & quantitative expansion

Rapid response to various demands from stakeholders
Simultaneous simulation by building modeling tables if possible

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Thank You

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